The Diagnostic Relevance of Children's Behavioral Symptoms as Reported by Their Parents

By

MARNELL LaROE HAYES

A DISSERTATION PRESENTED TO THE GRADUATE COUNCIL OF THE
UNIVERSITY OF FLORIDA IN PARTIAL FULFILLMENT OF THE
REQUIREMENTS FOR THE DEGREE OF DOCTOR OF EDUCATION

UNIVERSITY OF FLORIDA

1971

With joy and wonder,

to Carl

ACKNOWLEDGEMENTS

First, the writer wishes to express her thanks to Dr. Myron A. Cunningham, Chairman of her supervisory committee, for his patience, wisdom, and sense of humor which contributed greatly to the completion of this study.

Similarly, thanks go to the other committee members, Drs. Paul L. Adams, Audrey S. Schumacher, and Cary L. Reichard. Dr. Adams was the source of the suggestion for the study, and provided the encouragement to begin the investigation.

Others in three universities have given time and advice concerning the procedures used. These include Drs. Lee Joiner and Keith MacNeill at Southern Illinois University; Drs. Harold Knight, Walter Cooper, Richard Kazelskis, and Mr. James B. Davis at the University of Southern Mississippi; and Mr. Mark Bowers at the University of Florida.

Thanks are given for great encouragement from members of the University of Florida Mensa group, including Mark Bowers, Bob Davis, Harry Reid, Nancy Rolf, Roberta Solt, and Marsha Tyson.

There are two persons who have contributed both tangibly and intangibly to making the writer feel capable of continuing during the inevitable snags in the course of the dissertation. Carl B. Hayes, provided programming aid, editorial assistance, and a kind of confident, loving encouragement which made it impossible not to continue. Miss Valerie Pierce provided endless patience, cups of coffee, and the kind of special encouragement only a small daughter can give.

TABLE OF CONTENTS

Page

ACKNOWLEDGEMENTS iii

LIST OF TABLES vi

ABSTRACT vii

Chapter

I. INTRODUCTION 1

II. REVIEW OF THE LITERATURE 4

Parents' Reports 4
Factor Analysis 5
Factor-Analytic Studies of Adult Behavioral Symptoms 7
Factor-Analytic Studies of Child Behavioral Symptoms 12

III. DESIGN OF THE STUDY 22

Development of the Parents' Questionnaire· 22
Collection of the Data 24
Treatment of the Data 26
Factor Labeling Procedure 28

IV. RESULTS 30

Characteristics of the Sample 30
Sex Differences in Symptoms 35
The Factor Analysis 39
Diagnostic Relevance 47

V. SUMMARY, CONCLUSIONS, AND RECOMMENDATIONS 50

APPENDIX

A. Parents' Questionnaire 56
B. Easy-Read Matrix of Four Factors 58
C. Factor Labeling Instructions and Forms 59
D. Orthogonal Input Factor Matrix 63
E. Oblique Oblimin Primary Factors 66

BIBLIOGRAPHY 69

BIOGRAPHICAL SKETCH 72

LIST OF TABLES

Table Page

1. Biographical Data Summary 31

2. Age Distribution 32

3. Socio-economic Status 34

4. Distribution of Numbers of Symptoms 36

5. Symptom Distribution and Influence of Sex 37

6. Numbers of Subjects in Each Diagnostic Category 40

7. Easy-Read Matrix of Five Factors 43

8. Intercorrelations of Oblimin Primary Factors

9. R^2 Values for Symptom Checklist as Predictors of Final Diagnostic Categories 48

Abstract of Dissertation Presented to the Graduate Council
of the University of Florida in Partial Fulfillment of the
Requirements for the Degree of Doctor of Education

THE DIAGNOSTIC RELEVANCE OF CHILDREN'S BEHAVIORAL SYMPTOMS AS REPORTED BY THEIR PARENTS

By

Marnell LaRoe Hayes

June, 1971

Chairman: Myron A. Cunningham
Major Department: Special Education

A study of case records of 522 children seen in the Child Psychiatric Out-Patient Clinic at the University of Florida's J. Hillis Miller Medical Center and Shands Teaching Hospital was done in order to examine symptom patterns as parents observed them in their children prior to the first clinic visit.

Factor analysis of fifty-three symptoms checked by parents on a questionnaire as being present or absent in the child was accomplished, with five clear-cut factors emerging. These factors were labeled according to the distinguishing characteristics as follows:

Factor	I	Acting-our Aggressive
Factor	II	Immature Emotionality
Factor	III	Dishonest-Devious
Factor	IV	Fearful-Anxious
Factor	V	Learning Problems

Analysis of the influence of sex upon possession or non-possession of each of the symptoms was done by the calculation of values of Chi square for observed vs. expected frequency of the symptoms in boys and girls. Seventeen of the symptoms were significantly influenced by sex, with all except one of the symptoms being predominantly male.

Analysis of the relevance of parent reports of children's symptoms was accomplished by multiple linear regression. Only five of the eleven models showed significance; and of these, only relatively small amounts of the variance in diagnosis were accounted for by the symptoms.

CHAPTER I

INTRODUCTION

While it is often stated that symptoms in the disturbed child should be of far less concern than the basic problem which is manifested through these symptoms, there can be no doubt that the symptoms and the presenting problem they highlight are often of primary concern to the child's parents and teachers. Since the helping person's first exposure to the child is most often through the parent's eyes, it might be well to examine the child's problems as the parents view them, and to determine the interrelationships of these concerns.

Parents' initial contact with a child psychiatric setting is generally made through communication of those symptoms which have distressed the parent to such a degree that this first contact seeking help has been made. This initial contact is most frequently made as a result of the child's difficulty in functioning socially or academically in an educational setting, and the professional person with the greatest opportunity to provide objective information, continuous help, and support during and after the child psychiatric clinic aid is the teacher. Examination of the relationship of symptoms which can be observed by parents and teachers to the final diagnosis of the child's problems may be of considerable aid in helping teachers to fulfill this role.

Examination of the interrelationships of the parents' concerns about their child may also be of help to social workers and others whose role is to aid the parents during the child's treatment process. While parents may not be able to communicate the focus of their concern, communication of the behaviors in their child which concern them may yield a clearer picture of the central factor which brought them to the clinic.

An area of special interest concerns waiting list procedures. If pre-intake data are helpful in predicting diagnosis, such data might be useful to clinic administrators in formulating waiting list priorities.

While previous consideration has been given to parents' reports of their children's symptoms, much question is raised about the reliability of these reports, given in a clinic setting to a professional person. A study of information given by parents while they are motivated in seeking aid, and before that aid is actually given, would seem to be less likely to be contaminated by the anxieties and possible guilt feelings parents may experience after the actual diagnosis-treatment sequence for the child has begun.

The general purpose of the present study was to examine the symptoms noted by parents of children placed on a waiting list, and later seen in an out-patient child psychiatric setting. The specific purposes were:

First, to examine the numbers and types of symptoms noted by parents of children referred to such a clinic, as well as possible sex-related variations in numbers and types of symptoms;

To examine the relationships between parent-observed symptoms, and to examine these symptoms and clusters of symptoms as they represent types of parental concerns which cause parents to seek aid for their disturbed children;

To examine the possible diagnostic relevance of parents' reports of symptoms in their children; and

To suggest areas in which teachers, social workers, or others may assist in the educational process for disturbed children, or in the treatment process for their parents.

CHAPTER II

REVIEW OF THE LITERATURE

Parents' Reports

Accuracy of parents' reports has been the subject of considerable question and some study. While parents seeking help for their children may be motivated to give as much information as required in as precise a manner as possible, there are undoubtedly other factors influencing their ability to be factual.

McCord and McCord (1961) found that parents tend to make their picture of family life conform to cultural stereotypes. Similarly, Chess *et al.* (1960) found that when distortion occurs in parents' reports, it is generally in line with socially acquired concepts of optimal functioning.

Wenar and Coulter (1962) interviewed 25 mothers three to six years following an initial interview during which developmental histories were taken. Many differences were found between the initial information and that given in the subsequent interview. Of the 43 per cent of follow-up responses, 40 per cent were considered to be extreme. There was no tendency for mothers to give only more pleasant or positive information in the second interview. The information with the greatest affective content was found to be the least reliable. Areas of the child's functioning about which the mothers had the greatest amount of objective information were more reliable.

Somewhat related to the Wenar and Coulter findings are the findings by Zuk (1959) concerning parents of retarded children. Parents of retarded children with motor disabilities were compared with parents of children without motor disabilities on a measure of the child's degree of handicap. Parents of physically disabled retarded children had more realistic perceptions of the child's degree of siability. It would seem that these parents had objective evidence of the child's lowered level of functioning upon which to base their judgments.

Factor Analysis

Factor analysis is a method of reducing large data sets to meaningful smaller units, retaining as much of the infromation as is necessary to convey the integrity of the original description. According to Holzinger and Harmon (1941),

> Factor analysis is a branch of statistical theory concerned with the resolution of a set of descriptive variables in terms of a small number of categories or factors. This resolution is accomplished by the analysis of the intercorrelations of the variables. A satisfactory solution will yield factors which convey all the essential information of the original set of variables. The chief aim is thus to attain scientific parsimony or economy of description. (p. 3)

Modern factor analysis was first introduced by Thurstone (1931), with its first appeal being mainly to only those investigators with the extreme degree of patience necessary to explore its value without the aid of modern computing machinery. Application of factor analysis to psychological studies may have found its strongest beginning with the personality theory work of Cattell (1952), continuing to the present (1965, 1970).

Factor analysis yields indications of three types of variance as parts of the total variance of a particular variable: Common variance, unique variance, and error variance. Most factor analytic methods are concerned only with common variance as it correlates with other variables in the matrix.

The most controversial problem facing the researcher in the use of factor analysis is the decision concerning the number of factors to rotate. Rotation of too many factors results in some factors which are meaningless, as the variance which they are said to represent is essentially error variance. Rotation of too few factors leads to possible confusion of the true factor structure of the variables. Two problems may be encountered: First, additional factors may be subsumed in large, unwieldy factors. In personality research, this may be seen in large, rather general factors which are difficult to label, as they do not clearly represent distinct personality types. Further analysis of the same data set may yield additonal factors not discovered in the insufficient analysis.

Decision as to the number of factors to rotate may be made according to a number of criteria. Weiss (1971) discusses the Kaiser criterion, which specifies that only factors with factor contributions of 1.0 should be retained in the factor analysis, but cautions that this may result in underestimation of the number of actual factors. Another test suggested is Cattell's scree test, which is a two-dimensional plot with factors on the horizontal axis and size of factor contribution on the vertical axis. The factor contributions are plotted and connected with a curve. All factors to the left of the point of leveling off are retained as real factors; the factors remaining to the right are considered error factors. A suggested problem in the latter case is that more than one scree or curve may appear in a particular plot.

Factor-Analytic Studies of Adult Behavioral Symptoms

A major portion of those studies utilizing techniques similar to those used in the present study to examine symptom patterns are those dealing with adult patients. Chief among these is the series of studies accomplished by Wittenborn and his associates in the early 1950s.

Wittenborn (1950a) developed a quantified method for multiple psychiatric diagnosis, based upon 55 symptom rating scales. His purposes were to develop a useful scale which would make it possible for a competent observer to rate a patient's current symptoms, score the ratings, and prepare a profile which could be compared with symptom patterns which might be found to exist among such patients. He describes further utilization of his work (1951) as

> a. the validation of may diagnostic implications of psychological tests,
>
> b. a validation of many prognostic uses made of test scores,
>
> c. a quantified study of background factors which are associated with the appearance of certain symptom patterns,
>
> d. a quantified study of the conditions under which symptom patterns may change, and
>
> e. a quantified evaluation of certain therapeutic procedures. (p. 290)

In the 1951 study, which appears to be the second in this series, Wittenborn used his 55 rating scales to collect data on 140 male patients at Northampton Veterans Hospital. Raters were several psychiatrists and psychiatric nurses. While Wittenborn felt that his raters and his subjects were heterogeneous groups, and hence not ideal for revealing consistencies in symptom patterns, it would seem that the fact that both raters and patients were within a veterans' hospital setting might have made each group somewhat less heterogeneous than might have been desired. However, he suggests that should clear-cut symptom patterns appear in such a sample, this phenomenon might well be taken as an indication that further study with homogeneous samples would produce more precisely defined patterns.

Analysis yielded an orthogonal factor matrix in which relatively little overlap was seen among the seven clusters which emerged. Wittenborn describes characteristics of these clusters, but does not label them. In his discussion, he suggests that it is necessary to examine whether or not symptom patterns, such as those he found, exist in other populations and are not merely dependent upon the fact that his sample included only males, or certain age groups. This appeared to him particularly in his Factor I, characterized by those symptoms seen in hebephrenic schizophrenics and in patients hospitalized for long periods of time.

Wittenborn's questions concerning the generality of these clusters led to further studies using the previously developed scales. Wittenborn and Holzberg (1951a) had psychiatrists at Connecticut State Hospital, Middletown, Connecticut, rate all patients admitted during the first six months of 1949, a total of 250 patients. Conditions were more carefully controlled than in the Northampton study, for in this case, patients were rated on admission, and an attempt was made to exclude patients whose disturbances were felt to be of toxic or neurological origin.

The analysis, based on 51 of Wittenborn's original 55 scales, yielded eight clusters, again relatively clear-cut. Wittenborn and Holzberg found these clusters to be in "excellent agreement" with those found in the Northampton study, with differences accounted for in terms of known differences between the samples.

In a further study, Wittenborn, Mandler, and Waterhouse (1951) compared the results of factor analysis of 20 of Wittenborn's symptom rating scales applied to 83 mental hospital patients below the age of 30 with the results of the Middletown study, which dealt with patients below age 60, including some below-30 patients. The authors found little difference in symptom clusters in these younger patients as opposed to age-heterogeneous groups, suggesting that Wittenborn's procedure is suitable for evaluating patients in the under-30 age group. Further, in the earlier study, the cluster tentatively described as "hebephrenic schizophrenia of the deteriorated type" had appeared, and was felt to be representative of some patients hospitalized for long periods of time. The absence of this cluster in the under-30 age group was taken as corroborative evidence that the cluster in question was representative of a deteriorated condition.

Having established a degree of generality of clusters isolated with the Wittenborn procedure, Wittenborn, et al. (1952) undertook to provide evidence as to whether rater differences might influence clusters found. Two psychiatrists of known different backgrounds provided ratings, which were intercorrelated and analyzed separately. Findings indicated the analyses were similar, both to each other and to those found in the earlier ratings of large groups of patients by psychiatrists and other observers from numerous backgrounds. The findings were felt to support Wittenborn's claim that the clusters isolated by his method are relatively independent of rater differences.

The series of Wittenborn studies includes numerous other topics, including work on factor analysis of Rorschach scores (Wittenborn, 1950b and Wittenborn and Holzberg, 1951b), Wechsler-Bellevue (Wittenborn and Holzberg, 1951c), and work concerning change in patients following certain therapeutic procedures, including psychosurgery (Wittenborn and Mettler, 1951).

Guertin (1952) investigated the specific area of schizophrenic symptoms. He rated 100 hospitalized schizophrenics as to the presence or absence of 52 symptoms of schizophrenia gleaned from psychiatric textbooks. Guertin based his ratings on personal interviews with the patients, occasionally with consultations with ward attendants. Six factors were disclosed and labeled by consideration of the symptoms with the highest factor loadings. Guertin (1952) then performed an inverted factor analysis to demonstrate the practicality of describing schizophrenics on an individual basis in terms of loadings on a particular symptom factor.

Factor-Analytic Studies of Children's Behavioral Symptoms

Studies of the psychiatric symptoms of children have progressed in similar fashion. In general, investigators have attempted to use professional judgments of symptoms and to relate clusters thus isolated to diagnostic categories.

Jenkins and Hewitt (1944) analyzed 500 cases examined in a child guidance center, and described three types of children on the basis of deviant behavior traits. Type I, the "overinhibited" child, is described as seclusive, shy, apathetic, worried, sensitive, and submissive; a daydreamer who feels inferior, lacks close friends, cries easily, is overdependent, depressed and discouraged with himself, with frequent physical complaints and a proneness to neurotic illness. Type II, the "unsocialized aggressive" child, is a cruel, assaultive fighter who is defiant of authority, has inadequate guilt feelings, often is involved in malicious mischief, is selfish, jealous, vengeful, deceitful, and suspicious. He blames others for his conduct, uses profane and obscene language, and is precociously interested in sex. Type III, the "socialized delinquent" or "Pseudosocial" child, is characterized by delinquent gang activities, such as stealing, both in groups and alone, staying out late, leaving home, and bad companions.

Later, Jenkins and Glickman (1946a) analyzed records on 5,000 consecutive cases recorded in Ackerson's (1942) materials. Intercorrelations of a large number of traits were made, and five types were described. The first three types corresponded to the types described by Jenkins and Hewitt (1944). The two additional types were the encephalitic or "brain damaged" child, characterized generally by changeability in behavior or ability, restlessness both awake and asleep, nervousness, and irritability; and the "schizoid" child, considered absent minded, thought "queer" or crazy by others, inefficient or forgetful, seclusive, listless, and without initiative.

The materials were analyzed separately by sex, and among the "unsocialized aggressive" group based on the Ackerson materials, Jenkins and Glickman found a subgroup with more verbal aggression and egocentricity. They view this group "a feminine variant of the unsocialized aggressive child" (p. 254).

In a further work describing Type V, the schizoid child, Jenkins and Glickman (1946b) analyzed data on 500 cases from the Michigan Child Guidance Institute to determine what factors were related to the development of a schizoid personality. Comparison was made between the traits found in the analysis of the Ackerson material. The schizoid syndrome was found to overlap somewhat with the unsocialized aggressive syndrome and somewhat more with the overinhibited syndrome. Differentiation between the schizoid child and the unsocialized aggressive child is mainly on the basis of overt maternal rejection in the latter. The overinhibited child, on the other hand, feels insecure with his parents, but seeks security by his overconformity.

Patterson (1956) used a 149-item checklist to collect observations by child psychologists while testing children referred to three child guidance clinics. The sample consisted of 100 boys, ages seven through twelve, with IQs above 80, who had not been identified as being brain damaged. Five factors were derived:

Factor	I	Withdrawal
Factor	II	Hyperactivity
Factor	III	Immaturity
Factor	IV	Aggression
Factor	V	Anxiety

Patterson used linear discriminant function to determine whether these factors could discriminate between patients. The multivariate means of the combined factors were able to discriminate between two groups, twenty-four aggressive and fifteen withdrawn children, with an accuracy of 80 per cent for the withdrawn group and 87 per cent for the aggressive group.

In attempting to devise a more nearly accurate classification system for emotional disorders in children, Dreger _et al_. (1964) studied 372 clinical and 90 control children, ages 6 through 13. A checklist of 229 items was developed by expanding a list of 50 presenting complaints of parents. These items were administered through a card-sort method to all first admissions to 13 child guidance clinics in Florida over a set period of time. Controls were matched on the basis of age, sex, religion, and occupation of status parent. Factor analysis of 142 variables resulted in 10 factors. Comparison made of stratified random samples of each subgroup indicated more behaviors described as positive in controls, and more concern among control parents over sadistic aggressiveness and social immaturity.

Dreger utilized parent assessment of symptoms in the investigation; however, the study purports to provide information relevant to actual symptoms present, and appears to lose sight of the fact that these parent assessments may or may not reflect a true picture of the child's problems.

Dreger's study was criticized by Achenbach (1965) on a number of points, including the finding interpreted as indicating that non-psychiatric control subjects were seen by their parents as exhibiting more sadistic behaviors than were the clinic children. Dreger reaches this conclusion because ". . . control children exhibit an absolute number of these sadistic behaviors approximately equal to the number exhibited by clinical children . . . (but) because the total number of responses is less for control subjects, they are thus viewed as relatively possessing more of such behaviors. . ." (p.9). It would appear that these behaviors would be more likely noticed by parents of psychiatrically well children, whereas the parents of psychiatrically disturbed children might be more attuned to a broader range of symptoms as matters of concern. For example, while aggressive or sadistic behaviors might be noticed by parents of well children, disturbed sleep patterns or peculiar eating habits might be unnoticed as being in any way deviant in the normal child, whereas to the parent of a child in need of help, a multitude of such otherwise unremarkable symptoms might become matters of concern.

Dreger also performed cluster analysis on standard score profiles of the clinical group, and found five clusters or "types" of children, described as follows:

Cluster A: Relatively Mature, Semisociable Egocentricity

Cluster B: Relatively Immature, Nonsociable, Semisurgent Egocentricity

Cluster C: Sociable Anxiety

Cluster D: Semisociable, Nonanxious, Desurgent Retardation

Cluster E: Egocentric, Antisocial Aggressiveness

Some parallels between factors isolated in the Behavioral Classification Project and other research were examined.

A considerable weakness in this study, noted by both the authors and by Achenbach (1965), was poor inter-rater agreement (between two parents or parent surrogates) which yielded a mean of only 36 per cent.

In a more recent article, Dreger (1970) reports continued progress beyond the initial Behavioral Classification Project. Whereas ten factors emerged in the earlier analysis, twenty-five factors, some of which were bi-polar, emerged in the later analysis. Dreger labeled these factors as follows:

Factor I	Appreciative, Concerned, Obedient Social Orientation vs. Unappreciative, Agressive Disobedience
Factor II	Intellectual and Scholastic Retardation vs. Alert, Socialized Scholastic Achievement
Factor III	Disturbed Sleep and Dreams vs. Undisturbed sleep

Factor IV	Obsessive Sado-Masochism
Factor V	Self-Derogating School Phobia
Factor VI	Disobedient, Sullen, Hyperactive Aggressiveness
Factor VII	Anti-Social Agressiveness
Factor VIII	Negativism vs. Peer-Agressive Obedience to Authority
Factor IX	Sadistic Incontinence vs. Continence
Factor X	Temper Tantrums
Factor XI	Phobic, Negativistic, Finicky Eating vs. Positive Eating Habits
Factor XII	Ruminative Obsequiousness
Factor XIII	Immature, Neurasthenic, Paranoic Reactions
Factor XIV	Homoerotic Affectation vs. Hysteric Apprehension
Factor XV	Negativistic, Aggressive Sexuality
Factor XVI	"Dirty-Mindedness" vs. Clean Speech
Factor XVII	Fearful, Desurgent Seclusiveness vs. Sociableness
Factor XVIII	Masochistic Psychoid Reactions
Factor XIX	Verbal Psychoid Reactions
Factor XX	Anxious Organicism
Factor XXI	Sexualized, Psychoid Organicism
Factor XXII	Aggressive, Psychoid Organicism
Factor XXIII	Clumsiness and Visual Problems
Factor XXIV	Organic Psychosis
Factor XXV	Functional Psychosis

Dreger also shows awareness of the need to overcome some of the earlier criticisms of the BCP study. He points out the problem of examining syndromes which do not adequately discriminate clinic children from non-clinic children; problems in differentiating organic from functional disorders, especially during childhood's developmental stages; and difficulties in dividing acute and chronic behavior disorders.

Achenbach (1965) attempted to overcome both parental bias and the possibility of bias in the use of several different raters in his study of 600 child psychiatric patients. He used a female college graduate with no specialized training in psychology and himself as raters. (At the time of the study, Achenbach was a first- and then second-year graduate in personality research.) The two raters examined case files for mention of symptoms in reports prepared by several different observers with different relationships to the children. Not all children were seen by the same observers, not all by observers in the same fields; however, it was felt that the use of case file material would provide a good picture of the child, as the case files utilized were from a teaching hospital and hence assumed to be more complete than those in a non-teaching clinical setting. While Achenbach sought to remove bias from his ratings, it would appear that he may only have removed his ratings a significant step further from the reality of the child's problems.

Achenbach describes two principal factors, internalization and externalization, and a number of rotated factors for both sexes. Achenbach suggests that evidence exists to establish both child syndromes similar to adult classifications as well as syndromes unique to childhood age periods.

Rubin *et al*. (1966) performed an experimental study to determine the impact of a special education classroom setting on the academic and adjustment progress of disturbed children. One hundred fifty one of the 2,105 children in kindergarten through grade 2 of the Wyandotte school district were referred for possible placement in the special education program. The referral instrument was a teacher-response checklist of thirty-nine behaviors which could be observed over time in a classroom setting. Included were items such as "resists limits or rules in group games," "cannot work independently," "daydreams," etc. Factor analysis yielded the following seven factors:

Factor I	Disorientation and Maladaptation to the Environment
Factor II	Antisocial Behavior
Factor III	Unassertive, Overconforming Behavior
Factor IV	Neglect
Factor V	Infantile Behavior
Factor VI	Immature Social Behavior

Factor VII Irresponsible Behavior

Differences between these factors and factors found in other child studies may be related to the fact that the instrument used dealt with school adjustment, and the raters were teachers basing their judgments on school-observed behaviors.

It becomes apparent that factor analytic studies of children's behavioral symptoms have examined those symptoms from a number of points of view: As seen by the teachers, as observed by psychologists while working with the child, as described in written materials from many professionals working with the child, and as reported to clinic workers by parents. Some of the studies suggest that their findings are indicative of weaknesses in the diagnostic system; others, that they are suggestive of relative inability of the various judges to report children's behavioral symptoms adequately. Perhaps it is possible that there is valuable, reliable information from each of these points of view, and that the differences reflect differences in the concerns of the observers as they view the child's behavior. The present study, which examines observations made by parents during the pre-intake period, when they are most likely to be able to communicate their concerns, may shed additional light on this problem.

CHAPTER III

DESIGN OF THE STUDY

Development of the Parents' Questionnaire

The Division of Child Psychiatry at the University of Florida J. Hillis Miller Medical Center began seeing out-patient children on a referral basis in 1960. As residents in training in child psychiatry began seeing patients, it was felt that some systematic way of obtaining information from the child's parents prior to the first clinic visit should be instituted. Dr. Paul L. Adams and Miss Nancy F. McDonald, respectively Chief of the Division of Child Psychiatry and Chief Psychiatric Social Worker, examined the possibility of using a questionnaire for this purpose.

Dr. Adams and Miss McDonald examined pre-intake questionnaires obtained from clinics throughout the country. Most questionnaires designed as parent-response instruments were felt to be too lengthy and too advanced in reading comprehension level to be of general usefulness for the purposes of the out-patient service. Dr. Adams and Miss McDonald preferred a brief, simple form which would be filled out by parents early in the referral sequence, prior to any appointment scheduling for the child. In order to construct such a questionnaire, they selected items from the pool of items yielded by the questionnaires currently in use in other clincis, attempting to eliminate redundancies, questions requiring close discrimination in judgment by parents, and those items they felt would lend little to the value of the list. They then worded the symptoms in simple, non-psychiatric language so that the material would be readable by parents even with very low reading comprehension levels. The questionnaire that developed was a one-page, 53-item symptom list couched in simple, non-psychiatric terms, such as "angry too much," "wets bed," "too clinging to older people," seems scared,""hits parents," and "too babyish for age."

Dr. Adams and Miss McDonald used a simple checklist response format, eliminating the five-or seven-point rating scales used in many such questionnaires, thus simplifying the design further. They added a one-page sheet for demographic data such as birth order, age and occupation of parents, and history, again requested in simple terms. The Parents' Questionnaire is included as Appendix A.

The Parents' Questionnaire was to be filled out by the parents alone, and mailed to the clinic, rather than being filled out during the initial clinic visit with the aid of a social worker or other professional person. In actual practice, illiterate parents were occasionally assisted by a public health nurse, teacher, welfare worker, or other community service person who knew the family well and was active in assisting in the referral procedure from the beginning.

Questionnaires filled out with the assistance of a clinic staff person have the disadvantage of being more open to question for purposes of the present study, in many respects. It is thought that parents seeking aid for their child but who have not yet been given an appointment are more likely to respond to the questionnaire in terms of what their true concerns are. Questionnaires filled out during or after the initial interview would seem more likely to be influenced by guilt, expectations of clinic staff, or other factors which might inject data not originating in parents' observations.

The forms were to be filled out by both parents together when the child lived with both, or by the parent with whom the child lived. Completion of the forms was required prior to receiving a clinic appointment.

Collection of the Data

The closed case file of the outpatient service of the Division of Child Psychiatry, J. Hillis Miller Medical

Center and Shands Teaching Hospital, University of Florida, Gainesville, Florida, was screened for cases on which full information needed for the study was available. Of the approximately 1,000 case files both initiated and closed between January, 1963, when systematic use of this questionnaire began, and June, 1969, 522 usable records were obtained.

Excluded were a large number of children whose parents, for one reason or another, refused services after referral, or who dropped out before diagnosis was made. Inclusion in the study does not necessarily indicate that the case was closed as improved, but simply that the case had progressed to at least such an extent that diagnosis was made prior to termination.

Also excluded from the study group were cases in which the Parents' Questionnaire was missing from the case files. In addition to the usual reasons for incomplete files, two additional factors were in operation: First, the initial use of the Parents' Questionnaire was for the benefit of the individual therapist, and, therefore, occasionally the questionnaire did not become a part of the child's permanent case file or hospital chart; and second, prior to moving into permanent quarters in the Human Development Center in 1967, the Division of Child Psychiatry out-patient clinic operated in a number of temporary locations. Some materials may also have been lost during the transfers between groups of psychiatric residents over the years.

Diagnostic categories were based upon numerical designations as published in DSM-II: Diagnostic and Statistical Manual of Mental Disorders, 2nd Edition. Since the data covered a period of time prior to the publication of the second edition, as well as after its publication, many cases were classified under the earlier edition. As the data were collected, necessary changes were made to translate all categories to conform with the newer system.

Included in the study were 25 children whose eventual diagnosis was that they were without psychiatric disorder, and 32 children who were seen for purposes other than diagnosis and treatment, such as court-ordered evaluation of custody status, and who were, therefore, classified under a separate category for administrative purposes.

Treatment of the Data

General examination of the data was made, and numbers of subjects were counted according to age, sex, race, socio-economic category, educational level of parents, and diagnostic category into which the child was placed. In order to examine the numbers and types of symptoms noted by the parents, separate totals according to the sex of the child were figured for each of the fifty-three symptoms. Tally was also made of the number of symptoms checked for each child, so that information concerning the numbers of symptoms noted could be compared according to sex. Means were also calculated for each group.

To examine possible sex differences in symptoms, Chi square values were calculated for each of the symptoms, with the groups divided by sex and by possession or non-possession of the symptom.

Examination of the patterns of parent-observed symptoms was done through factor analysis, first obtaining a principal axis factor matrix and later transforming this by the Oblimin method described by Guertin and Bailey (1970), obtaining the final factor matrix.

First, a principal axis factor analysis of the data yielded a 15 by 53 unrotated factor matrix. Decision to rotate four factors was based upon the scree test with close agreement with the Kaiser criterion.

The Oblimin rotation was accomplished, with three of the four factors having psychological relevance, but the first factor somewhat unwieldy and rather difficult to label. The decision to rotate five factors was based upon the author's concern that this first factor might actually contain two factors, or that further factors might emerge. The four-factor solution at that point accounted for only 61 per cent of the common variance. Re-examination of the scree test of the factor contributions of the 15 factor solution indicated that the point of leveling off, while below the 1.0 suggested by the Kaiser criterion, might be interpreted as following the fifth rather than the fourth factor. Further, the variance was quite unequally distributed, with the first factor sum of squared factor loadings at 4.32 and the other factor sums of squared factor loadings at or below 2.14, with the lowest sum at 1.59. The Easy-Read Matrix of the four factors is included as Appendix B.

The rotation to a five-factor solution produced five-psychologically meaningful factors with considerably more differentiation of parental concerns. While three of the factors remained essentially unchanged, the first factor split into two distinctly different factors. The variance, as expected in a solution accounting for more real factors, was more evenly distributed, with the range of sums of squared factor loadings for all fifty-three variables ranging from 1.59 to 2.29. Moreover, the percentage of common variance accounted for increased to 65 per cent.

Factor Labeling Procedure

Labeling of the factors was done with the aid of Dr. Paul L. Adams and Miss Nancy McDonald, who had developed the instrument used in the study, as well as Dr. Audrey Schumacher, a child psychologist, member of the faculty of the University of Florida Department of Psychology, and member of the author's doctoral supervisory committee. Each was given instructions to examine the factors and to formulate a label which would encapsulate the characteristics of the constellation of symptoms and to differentiate that factor from the other four factors. Instructions and forms used for this labeling are presented as Appendix C.

As a check on the descriptive and discriminative value of the labels, the judges were asked to select raters appropriate to their fields, and to provide the raters with the unlabeled factor lists and the labels. The raters were to be able to match labels to factors with 100 per cent accuracy, or new labels were to be formulated and the procedure repeated. Then the labels formulated by the three judges were examined by the author, and final labels agreed upon with the assistance of the author's supervisory committee. A final check of the descriptive value of the labels was made with additional raters.

In order to examine the diagnostic relevance of the parent-reported symptoms, multiple linear regression was performed upon the entire symptom list, using the general diagnostic categories as criteria.

CHAPTER IV

RESULTS

Characteristics of the Sample

Case file screening yielded 522 records which met the criteria for inclusion in the study. Of these, 340 were records for boys, and 182 for girls. Caucasian children numbered 495; Negro children, 27. At the time they were first seen, 64 of the children were reported as "only" children. Parents reported 49 children as being adopted.

An attempt was made to indicate the numbers of children living in various family structures, but the original questionnaire made no specific provision for collection of this information. At least 98 children were from family types other than intact families. Included in this group were children from one-parent homes, foster homes, and otherwise intact families where one parent was a step-parent. This figure is probably quite low, as parents did not always include information as to whether or not one of the listed parents was a step-parent, or whether the parents listed were living together. Summation of the above information is presented in Table 1, Biographical Data Summary.

Table 1.--Biographical Data Summary

Boys	340
Girls	182
Total	522
Caucasian	495
Negro	27
Total	522
Children with siblings	458
"Only" children	64
Total	522
Natural children of parents	473
Adopted children	49
Total	522
From intact families	424
Other type families	98
Total	522

Age range of the children was tabulated according to their ages upon first admission. The range was from 2 years 0 months to 18 years 11 months. The mean for boys was 10 years 2.2 months, and for girls, 11 years 0.6 months. Mean age for the entire group was 10 years 5.8 months. A listing of the numbers of each sex in each age range is presented in Table 2.

Educational levels of parents ranged from no formal education through advanced graduate work. For purposes of the study, levels of education were tabulated according to years of schooling. In cases of advanced

Table 2.--Age Distribution

Age in years and months	Boys	Girls	Total
0-0 to 0-11	0	0	0
1-0 to 1-11	0	0	0
2-0 to 2-11	3	1	4
3-0 to 3-11	6	2	8
4-0 to 4-11	8	5	13
5-0 to 5-11	25	12	37
6-0 to 6-11	24	6	30
7-0 to 7-11	25	10	35
8-0 to 8-11	43	17	60
9-0 to 9-11	25	14	39
10-0 to 10-11	41	11	52
11-0 to 11-11	29	18	47
12-0 to 12-11	25	24	49
13-0 to 13-11	26	19	45
14-0 to 14-11	29	18	47
15-0 to 15-11	23	17	40
16-0 to 16-11	6	6	12
17-0 to 17-11	1	2	3
18-0 to 18-11	0	0	0
	340	182	522

degrees, medical and other doctorates, advanced law degrees, medical specialization, and other types of advanced degrees, it was not always possible to determine from the records the number of years involved; therefore, the decision was made to record all such degrees in the highest category, 19 years of education. Using this scale, mean years of education of fathers was 12.75 years, and for mothers, 12.33 years. It would appear from these figures that the educational level of parents of both sexes was very similar; however, a closer look at the data reveals that this is not so. More mothers were high school graduates (185 as opposed to 142 for fathers), but far more fathers held advanced degrees or had done advanced work beyond the master's level in various fields (49 for fathers as opposed to 1 for mothers).

Socio-economic status was determined according to the occupation of the father, or, in fatherless homes, by the occupation of the mother, according to the six-category scale by Edwards (1940). Some divergence from this scale was used in certain cases. For example, families in which one or more parents were graduate students at the University of Florida were classified as Category 2, along with proprietors, managers, and officials. In these cases, the economic level may have been considerably lower than others in this group, but the social level and projected socio-economic level was as high or higher.

A second socio-economic group not adequately classified in the Edwards system was the group made up of families in which the status parent was either unemployed or supported entirely by welfare. For the purposes of the present study, these families were grouped with Category 6, unskilled laborers.

The family breakdown according to socio-economic status is as follows:

Table 3.—Socio-economic Status

Category 1	Professional persons	98
Category 2	Proprietors, managers, and officials; farmers (owners), wholesale and retail trade, college students	111
Category 3	Clerks and kindred workers; also sales	104
Category 4	Skilled workers and foremen	69
Category 5	Semi-skilled workers	63
Category 6	Unskilled workers, farm laborers, servants, unemployed, and welfare	77
		522

Numbers of symptoms noted for each child were calculated. For boys, the range was from no symptoms noted to 39 symptoms, with a mean of 15.22 symptoms noted by parents. For girls, the range was from no symptoms to 35 symptoms, with a mean of 12.88 symptoms. The group mean was 14.41. Information indicating numbers of boys and girls having each number of symptoms is presented in Table 4.

Sex Differences in Symptoms

Examination was made of the distribution of the various symptoms among the children in the study population. It appeared clear that there were differences in the symptom distribution according to sex. Chi square analyses of each of the fifty-three symptoms using Yates' correction for small degrees of freedom compared the expected with the observed frequencies for both sexes. Seventeen of the fifty-three analyses showed significant difference according to sex at the .05 level or better, and all but one of these proved to be symptoms significantly more often found in boys than in girls. Table 5 shows the distribution of the fifty-three symptoms according to sex, including number and percentage figures for boys and girls as well as for the total number. Values of Chi square are given, with significance at the .05 and .01 levels indicated.

Table 4.--Distribution of Numbers of Symptoms

Number of Symptoms	Boys	Girls	Total
0	1	5	6
1	4	5	9
2	4	2	6
3	7	6	13
4	9	6	15
5	7	8	15
6	13	12	25
7	11	10	21
8	9	11	20
9	16	6	22
10	12	5	17
11	16	14	30
12	21	8	29
13	19	7	26
14	12	7	19
15	18	6	24
16	17	14	31
17	17	5	22
18	16	8	24
19	13	4	17
20	16	2	18
21	12	7	19
22	8	1	9
23	13	3	16
24	15	2	17
25	3	2	5
26	8	1	9
27	7	2	9
28	4	2	6
29	4	2	6
30	1	2	3
31	2	2	4
32	1	2	3
33	0	0	0
34	2	0	2
35	1	3	4
36	0	0	0
37	0	0	0
38	0	0	0
39	1	0	1
	340	182	522
Mean	15.22	12.88	14.41

Table 5.—Symptom Distribution According to Sex

Symptom Number	Description	Number Males	Percent Males	Number Females	Percent Females	Total Number	Total Percent	Chi Square
1	Angry too much	159	46.8	77	42.3	236	45.2	0.779
2	Unpredictable	159	46.8	59	32.4	218	41.8	9.452**
3	Wets bed	79	23.2	32	17.8	111	23.1	1.937
4	Soils self	51	15.0	7	3.8	58	11.1	13.842**
5	Sudden rages	160	47.1	64	35.2	224	42.9	6.369**
6	Seems scared	127	37.4	62	34.1	189	36.2	0.421
7	Seems depressed	121	35.6	77	42.3	198	37.9	1.997
8	Trouble speaking	118	34.7	48	26.4	166	31.8	3.420
9	Overactive	164	48.2	46	25.3	210	40.2	25.044**
10	Trouble reading	157	46.2	57	31.3	214	41.0	10.213**
11	Trouble learning	195	57.4	73	40.1	268	51.3	13.427**
12	Throws tantrums	134	39.4	51	28.0	185	35.4	6.233**
13	Poor concentration	223	65.6	83	45.6	306	58.6	44.668**
14	Nothing soaks in	138	40.6	52	28.06	190	36.4	6.885**
15	Won't pay attention	196	47.6	67	36.8	263	50.4	19.758**
16	Sucks thumb	36	10.6	28	15.4	64	12.3	2.109
17	Has unusual eating habits	114	33.5	54	29.7	168	32.2	0.642
18	Untidy	106	31.2	50	27.5	156	29.9	0.609
19	Won't do what promises	129	37.9	45	24.7	174	33.3	8.732**
20	Lies	148	43.5	58	31.9	206	39.5	6.268**
21	Bites Nails	95	37.9	62	34.1	157	30.1	1.833
22	Steals	94	27.6	28	15.4	122	23.4	9.280**
23	Destructive	123	36.2	34	18.7	157	30.1	16.431**
24	Won't go to school	39	11.5	32	17.6	71	13.6	3.266
25	Skips school	27	7.9	9	4.9	36	6.9	1.224
26	Hits parents	53	15.6	19	10.4	72	13.8	2.228
27	Mistreats children	79	23.2	33	18.1	112	21.5	1.542
28	Cries easily	163	47.9	91	50.0	254	48.7	0.127
29	Sets fires	32	9.4	3	1.6	35	6.7	10.214**
30	Pulls out hair	7	2.1	9	4.9	16	3.1	2.423
31	Masturbates or "plays with self"	46	13.5	18	9.9	64	12.3	1.141

Table 5.—Continued

Symptom Number	Description	Number Males	Percent Males	Number Females	Percent Females	Total Number	Total Percent	Chi Square
32	Does not respect authority	129	37.9	52	28.6	181	34.7	4.190*
33	Runs away from home	37	10.9	19	10.4	56	15.7	0.000
34	Too many fears	94	27.6	50	27.5	44	27.6	0.004
35	Too babyish for age	149	43.8	69	37.9	218	41.8	1.469
36	Has physical complaints	100	29.4	70	38.5	170	32.6	4.018*
37	Won't keep a secret	60	17.6	37	33.0	97	18.6	0.400
38	Lacking sense of shame	73	21.5	33	18.1	106	20.3	0.623
39	Won't listen to parents	149	43.8	67	36.8	216	41.4	2.121
40	Too shy	58	17.1	40	22.0	98	18.8	1.572
41	Seems in own world a lot of time	131	38.5	60	33.0	191	36.6	1.350
42	Dislikes mother	36	10.6	28	15.4	65	12.3	2.109
43	Dislikes father	34	10.0	24	13.2	58	11.1	0.918
44	Too jealous of brother and/or sister	95	27.9	58	31.9	153	29.3	0.703
45	Curses	58	17.1	24	13.2	82	15.7	1.066
46	Talks dirty	43	12.6	12	6.6	55	10.5	3.989*
47	Has nightmares	71	20.9	49	26.9	120	23.0	2.114
48	Cheats	48	14.1	19	10.4	67	12.8	1.153
49	Has sexual problems	19	4.6	16	8.8	35	6.7	1.466
50	Tries to act like grownup	54	15.9	37	20.3	91	17.4	1.335
51	Seems to have poor sense of right and wrong	93	27.4	45	24.7	138	26.4	0.297
52	Does not learn from experience	100	29.4	54	29.7	154	29.5	0.002
53	Too clinging to older people	74	21.8	53	29.1	127	24.3	3.096

*indicates significance at the .05 level
**indicates significance at the .01 level

The only symptom found significantly more often among girls than among boys was symptom 36, "Has physical complaints" with Chi square = 4.018 (P.< 05).

Of the symptoms found significantly more often among boys than girls, all but two were significant at the .01 level. Those significant only at the .05 level were symptoms 32 and 46, "Does not respect authority" and "Talks dirty." Of those significant at the .01 level, two were so significant that carrying the probability to four figures beyond the decimal point yielded only zeros. These were symptoms 9 and 13, "Overactive" and "Poor Concentration."

The Factor Analysis

Tabulation was also made of the numbers of subjects in each of the general diagnostic categories, using the designations presented in DSM II. Some categories are not listed in Table 6 exactly as presented in DSM II. The decision was made prior to the data collection to list all categories, whenever possible, exactly as listed by the diagnosticians. In some cases, this resulted in divergence from DSM II. For example, Mental Retardation categories according

Table 6.--Numbers of Subjects in Each Diagnostic Catetory

	Category		Number Males	Number Females	Total Number
I.	Mental Retardation				
	310	Borderline	2	0	2
	311	Mild	27	9	36
	312	Moderate	15	8	23
	313	Severe	9	2	11
	314	Profound	0	0	0
	315	Unspecified	0	0	0
			53	19	72
II.	Organic Brain Symdrome				
	B.	Non-Psychotic			
	309.0	Unspecified*			
III.	Psychoses Not Attributed to Physical Conditions Listed Previously				
	Schizophrenia				
	295.0	Simple	3	0	3
	295.2	Catatonic	0	1	1
	295.8	Childhood	5	2	7
	295.90	Chronic Undifferentiated	2	0	2
			10	3	13

* So few cases existed in this general category that they were tabulated together.

Table 6, Continued

Category			Number Males	Number Females	Total Number
IV.	Neuroses				
	300.0	Anxiety	15	10	25
	300.13	Hysterical, Conversion type	1	3	4
	300.14	Hysterical, Dissociative type	1	1	2
	300.2	Phobic (except school phobia)**	3	3	6
	300.3	Obsessive-compulsive	4	4	8
	300.4	Depressive	8	4	12
	300.8	Other Neurosis	1	6	7
			33	31	64
V.	Personality Disorders and Certain other Non-psychotic Mental Disorders				
	301.2	Schizoid	1	1	2
	301.4	Obsessive-Compulsive	3	0	3
	301.5	Hysterical	5	0	5
	301.7	Antisocial	4	1	5
	301.81	Passive-aggressive	11	11	22
	301.82	Inadequate	0	1	1
			24	14	38
VI.	Psychophysiological disorders				
	305.2	Respiratory	0	2	2
	305.5	Gastro-intestinal	2	3	5
	305.6	Genito-urinary	1	1	2
	305.8	Organ of special sense	0	1	1
			3	7	10

** For purposes of the present study, it was felt that school phobia should be listed separately as a category of special interst.

Table 6, Continued

	Category		Number Males	Number Females	Total Number
VII.	Special Symptoms				
	306.0	Speech disturbance	0	1	1
	306.1	Specific learning disability	19	2	21
	306.2	Tic	1	0	1
	306.6	Enuresis	0	1	1
	306.7	Encopreses	6	0	6
	306.9	Other special symptoms: School phobia	7	9	16
			33	13	46
VIII.	Transient Situational Disturbances				
	307.1	Adjustment Reaction of Childhood	100	35	135
	307.2	Adjustment Reaction of Adolescence	40	26	66
			140	61	201
IX.	Behavior Disorders of Childhood and Adolescence				
	308.4	Unsocialized Aggressive	3	2	5
X.	Conditions Without Manifest Psychiatric Disorder and Non-Specific Conditions				
	318.	No mental disorder	17	8	25
XI.	319.0	Other (no diagnosis)	18	14	32
				Grand Total	522

Table 7.--Easy-Read Matrix of Five Factors

	1	2	3	4	5
46 Talks dirty	0.5067				
45 Curses	0.4578				
43 Dislikes father	0.4159				
22 Steals	0.3989				
48 Cheats	0.3978				
49 Has sexual problems	0.3633				
27 Mistreats children	0.3623				
42 Dislikes mother	0.3582				
23 Destructive	0.3347				
4 Soils self		0.6608			
15 Won't pay attention		0.5493			
12 Throws tantrums		0.5324			
1 Angry too much		0.5321			
2 Unpredictable		0.4403	0.3080		
3 Wets bed		0.3671			
5 Sudden rages		0.3608			
19 Won't do what promises			0.4934		
32 Does not respect authority			0.4506		
52 Does not learn from experience			0.4505		
39 Won't listen to parents			0.4472		
20 Lies			0.3999		
37 Won't keep a secret			0.3231		
51 Seems to have poor sense of right and wrong			0.3120		
34 Too many fears				0.5687	
6 Seems scared				0.4836	
36 Has physical complaints				0.3593	
53 Too clinging to older people				0.3539	
7 Seems depressed				0.3488	
28 Cries easily				0.3197	
11 Trouble learning					0.5587
10 Trouble reading					0.5236
13 Poor concentration					0.4721
14 Nothing soaks in					0.3377
35 Too babyish for age					0.3059

to I.Q. levels were not always used by the child psychiatrist in determining level of mental retardation; therefore, no attempt has been made to tabulate the number of mentally retarded children seen according to I.Q. This information is presented in Table 6.

The initial factor analyses have been discussed previously in order to delineate the procedures used in the study. The analysis used as the final solution in this study accounted for 65 per cent of the common variance, which is 31.8 per cent of the total variance, as shown in the Orthogonal Input Factor Matrix, Appendix C. Rotation to the Oblimin solution yielded the Oblique Oblimin Primary Factor Matrix. These matrices are presented for reference as Appendices D and E. Eliminating values below .30 in the Oblique Oblimin Primary Factor Matrix yielded the "Easy Read" matrix presented in Table 7. Examination of this table indicates that the factors are relatively independent, with only one variable, symptom 2, "Unpredictable" loading on more than one factor. Further, the intercorrelation matrix presented in Table 8 indicates only Factors I and V to be more than slightly intercorrelated.

Table 8.--Intercorrelations of Oblimin Primary Factors

	1	2	3	4	5
1	1.00000	0.07529	0.03819	0.16383	0.37259
2	0.07529	1.00000	0.14822	0.14526	0.25746
3	0.03819	0.14822	1.00000	0.13848	0.15281
4	0.16383	0.14526	0.13848	1.00000	0.26119
5	0.37259	0.25746	0.15281	0.26119	1.00000

Factor I, Acting-out Aggressive, is seen as talking "dirty," cursing, disliking both parents, stealing, cheating, having sexual problems, mistreating children, and being destructive. The preponderance of these symptoms was found in the Chi square analysis as predominantly male symptoms.

Factor II, Immature Emotionality, is the child who soils himself, won't pay attention, has temper tantrums, is angry too much, unpredictable, wets the bed and has sudden rages.

Factor III, Dishonest-Devious, is described as not keeping promises, not respecting authority, not learning from experience, not listening to parents, lying, not keeping secrets, and having a poor sense of right and wrong. In the four-factor solution, this factor had been subsumed under Factor I, producing a factor which was difficult to explicate in meaningful terms. The five-factor solution shows clearly the differentiation between the first factor, a child whose problems as seen by his parents are involved in acting-out types of difficulties, and Factor III, a child whose problems are more involved in dishonest behaviors.

Factor IV, Fearful-Anxious, is the child who has too many fears, seems scared, has physical complaints, is too clinging to older people, seems depressed, and cries easily.

Factor V, Learning Problems, is the child who is having trouble learning, trouble reading, poor concentration, "nothing soaks in," and being too "babyish" for his age. This particular factor appears to represent parental concern over school problems in a troubled child, a factor not found in other factor analytic studies of children's behavioral problems, probably because most studies have dealt with symptoms observed by professional observers functioning in a clinical setting. While child clinic workers often subjectively report parents waiting to seek aid for a child's problem until his school work is affected, as well as increases in numbers of parent referrals just prior to the beginning of a given school term and just after the first grade reporting period, this factor has not been clearly seen in previous research.

Diagnostic Relevance

In an attempt to examine the relevance of parent-observed symptoms to diagnosis made by the child psychiatrist, multiple linear regression was accomplished on the 53 variables, using the eleven general diagnostic categories as criteria. Of the eleven models, five had F-ratios significant at the .05 level or better. The greatest percentage of variance accounted for by all the variables examined in a general diagnostic category was 24.63 per cent for Model 9, Mental Retardation. F-ratios, significance, and percentage of the variance accounted for by the fifty-three symptoms for each of the eleven models are presented in Table 9.

From the small amount of variance in diagnosis accounted for by knowledge of the presence or absence of fifty-three variables, it would appear that these parent-reported symptoms have little direct relevance to diagnosis. Apparently, the factors which have evolved in this study represent rather specific parental concerns which cause them to seek aid for their children. While parents undoubtedly observe many behaviors in their children, their concern is concentrated in certain behaviors,

Table 9.—R^2 Values for Symptom Checklist as Predictors of Final Diagnostic Categories

Diagnostic Category	R^2	F
Model 1 Schizophrenia	.1032	1.038
Model 2 Neuroses	.1430	1.505*
Model 3 Personality disorders	.1479	1.566*
Model 4 Psychophysiological disorders	.0640	0.616
Model 5 Special symptons	.1561	1.669**
Model 6 Transient dituational disturbances	.1755	1.920**
Model 7 Behavior disorders of childhood	.1213	1.245
Model 8 Organic brain syndrome	.0845	0.833
Model 9 Mental Retardation	.2463	2.947**
Model 10 No mental disorder	.0889	0.880
Model 11 No diagnosis made	.1182	1.209

*Indicates significance at the .05 level

**Indicates significance at the .01 level separately or in combinations, which may or may not be diagnostically significant. It is possible that these direct their attention revealing far more about the parents themselves than about the children; however, further study examining possible differences in groups of parents who see their children according to the patterns described by the five factors must be done in order to answer this question.

CHAPTER V

SUMMARY, CONCLUSIONS, AND RECOMMENDATIONS

A study of case records of 522 children seen in the Child Psychiatric Out-Patient Clinic at the University of Florida's J. Hillis Miller Medical Center and Shands Teaching Hospital was done in order to examine symptom patterns as parents observed them in their children prior to the first clinic visit.

Factor analysis of fifty-three symptoms checked by parents on a questionnaire as being present or absent in the child was accomplished with five clear-cut factors emerging. These factors were labeled according to the distinguishing characteristics as follows:

Factor I Acting-out Agressive
Factor II Immature Emotionality
Factor III Dishonest-Devious
Factor IV Fearful-Anxious
Factor V Learning Problems

Analysis of the influence of sex upon possession or non-possession of each of the symptoms was done by the calculation of values of Chi square for observed vs. expected frequency of the symptoms in boys and in girls. Seventeen of the symptoms showed significant sex differences, with all except one of the symptoms being predominantly male.

Analysis of the relevance of parent reports of children's symptoms was accomplished by multiple linear regression. Only five of the eleven models showed significance; and of these, only a relatively small percentage of the variance in diagnosis was accounted for by the symptoms.

A possible explanation for the simplicity of the factor structure found in the analysis might be that the questionnaire provided a built-in simplicity, with many behavioral symptoms included in earlier questionnaires either deleted or collapsed into simpler, more easily interpreted categories which the parents could use with relative ease. This suggestion does not imply that the factor structures described in other studies are too complex, nor that the present study has found factors which are too simple to be of use. The five factors which emerged from the present study provide explication of general areas of parental concern which motivate parents to seek psychiatric clinic referral for their children. The more complex factor structures seen in other studies using large pools of variables yielding large numbers of factors may provide more specific clues to parents' concerns.

Failure to find significant relationships between parents' reports of symptoms in their children and the child psychiatrist's diagnosis may be attributable to a number of causes:

1. Parents may be unable to judge presence or absence of symptomatic behavior in their children accurately. For example, a parent may judge his child to be "angry too much" or "too babyish for age" when the child is within normal limits when seen by a trained observer.
2. Psychiatric diagnosis in a clinic setting may not take into account behaviors which cannot be observed in that setting, such as school problems or behavior towards parents or siblings.
3. Children referred for psychiatric help and eventually placed in the same diagnostic category may be seen by their parents as having distinctly different problems according to certain differences between parents, such as socioeconomic group or educational gackground.
4. Parents' reports, while not reflecting the child's basic problem, may reflect very accurately the concerns the parent has for that child, and for that child's interaction with the parent and with others.

Further utilization of techniques such as factor analysis not feasible until the development of sophisticated computing machinery will undoubtely result in further studies of symptom patterns in clinic populations. Implementation of elaborate storage and retrieval systems will provide access to considerable data of the type collected in the past only through laborious file searches such as that accomplished in the present study. Compilation of sufficient data bases to provide numbers of cases far greater than the number studied here will make it possible to examine more closely the variables in the backgrounds of the parents which may influence the ways in which they see their children. It is suggested that future studies which have access to such large numbers analyze data with a number of breakdowns, such as socio-economic background of parents. Further, separate analysis of data according to sex may be helpful, as it appears from the present study that both individual symptoms and some factors may be differently distributed between the sexes.

Teachers may be able to assist parents in seeking aid for their children by being attuned to behavioral changes in their students. While teachers often see changes in academic behavior as being a result of emotional problems in the child, they might well be aware that when such changes do occur, the parent may see the school problem as the primary matter of concern rather than as an indication of a more basic problem.

While parents' reports may not be of direct relevance in determining waiting list priorities or predicting diagnosis, the information provided by this study has clear implications for work with parents. Social workers and others working with parents will need to realize that in addition to translating to parents the child's problems and progress, they will need to deal with the concern which brought the parents to the clinic for aid. If the parents have seen their child in terms of certain behaviors, and were concerned to the point that they brought their child for help, these behaviors which provided the focus for their concern will be as real to them as the behaviors which provided the psychiatrist the pattern for his diagnosis.

APPENDIX

Appendix A

PARENTS' QUESTIONNAIRE

Child's Name ____________________ Birthdate ________________

Age ______________ School Grade _____________

Father's Name ____________________________ Age _____________

Education _________________ Where Employed __________________

Religion __________________

Mother's Name ____________________________ Age _____________

Education _________________ Where Employed __________________

Religion __________________

Family's Address _______________________ Phone No. __________

Ages of this child's brothers and sisters:

____

(1) What is your child like? Briefly describe your child:

(2) What do you consider the main problems?

(3) How long have the problems existed?

(4) Has anything happened recently, inside or outside the family, to make the problems more urgent? What?

(5) What illnesses, hospitalizations, and/or accidents has your child had? At what ages?

(6) Have there been any separations from the family?

(7) If your child has had any previous evaluations please write below the dates of these evaluations and where we may write for copies of these reports:

CHILD'S PROBLEMS OBSERVED BY PARENTS

Angry Too Much__________

Unpredictable__________

Wets Bed__________

Soils Self__________

Sudden Rages__________

Seems Scared__________

Seems Depressed__________

Trouble Speaking__________

Overactive__________

Trouble Reading__________

Trouble Learning__________

Throws Tantrums__________

Poor Concentration__________

Nothing Soaks In__________

Won't Pay Attention__________

Sucks Thumb__________

Has Unusual Eating Habits__________

Untidy__________

Lies__________

Bites Nails__________

Steals__________

Destructive__________

Won't Go to School__________

Skips School__________

Hits Parents__________

Mistreats Children__________

Cries Easily__________

Sets Fires__________

Pulls Out Hair__________

Masturbates or "Plays with Self"

Does Not Respect Authority__________

Runs Away From Home__________

Too Many Fears__________

Too Babyish for Age__________

Has Physical Complaints__________

Won't Keep a Secret__________

Won't Do What Promises__________

Lacking Sense of Shame__________

Won't Listen to Parents__________

Too Shy__________

Seems in Own World a Lot of Time

Dislikes Mother__________

Dislikes Father__________

Too Jealous of Sister and/or Brother__________

Curses__________

Talks Dirty__________

Has Nightmares__________

Cheats__________

Has Sexual Problems__________

Tries to Act Like Grownup__________

Seems to Have Poor Sense of Right and Wrong__________

Does Not Learn from Experience__________

Too Clinging to Older People__________

What are main problems?__________

Forms filled out by__________ Date__________

Appendix B

EASY-READ MATRIX OF FOUR FACTORS

	1	2	3	4
20 Lies	0.5735			
22 Steals	0.5543			
32 Does not respect authority	0.5358			
39 Won't listen to parents	0.4991			
19 Won't do what promises	0.4773			
51 Seems to have poor sense of right and wrong	0.4560			
38 Lacking sense of shame	0.4503			
45 Curses	0.4463			
46 Talks dirty	0.4446			
48 Cheats	0.4423			
23 Destructive	0.4412			
52 Does not learn from experience	0.4300			
18 Untidy	0.3654			
27 Mistreats children	0.3307			
44 Too jealous of siblings	0.3240			
42 Dislikes mother	0.3133			
4 Soils self		0.6629		
15 Won't pay attention		0.5415		0.3203
1 Angry too much		0.5224		
12 Throws tantrums		0.5161		
2 Unpredictable		0.4100		
3 Wets bed		0.3847		
5 Sudden rages		0.3515		
34 Too many fears			0.5664	
6 Seems scared			0.4791	
53 Too clinging to older people			0.3533	
36 Has physical complaints			0.3469	
7 Seems depressed			0.3442	
28 Cries easily			0.3113	
40 Too shy			0.3069	
11 Trouble learning				0.5357
10 Trouble reading				0.5017
13 Poor concentration				0.4683
14 Nothing soaks in				0.3504

Appendix C

FACTOR LABELING

Procedure:

Each of the judges should independently examine the factors as described and formulate a label or name. The name should serve to encapsulate the characteristics of the constellation of symptoms and to differentiate that factor from the other three factors. As a check on the descriptive, discriminative value of the labels, the judge should select three raters (child psychiatry residents, psychology interns, or social work students, appropriate to the judge's field), and provide the raters with the four-factor lists (unlabeled) and the labels. The raters should be able to match labels to factors with 100 per cent accuracy.

FACTOR I

Acting-out Aggressive

Loading	Symptom Number	Symptom
.51	46	Talks dirty
.46	45	Curses
.42	43	Dislikes father
.40	22	Steals
.40	48	Cheats
.36	49	Has sexual problems
.36	27	Mistreats children
.36	42	Dislikes mother
.33	23	Destructive

FACTOR II

Immature Emotionality

Loading	Symptom Number	Symptom
.66	4	Soils self
.55	15	Won't pay attention
.53	12	Throws tamtrums
.53	1	Angry too much
.44	2	Unpredictable
.37	3	Wets bed
.36	5	Sudden rages

FACTOR III

Dishonest-Devious

Loading	Symptom Number	Symptom
.49	19	Won't do what promises
.45	32	Does not respect authority
.45	52	Does not learn from experience
.45	39	Won't listen to parents
.40	20	Lies
.32	37	Won't keep secret
.31	51	Seems to have poor sense of right and wrong
.31	2	Unpredictable

FACTOR IV

Fearful-Anxious

Loading	Symptom Number	Symptom
.57	34	Too many fears
.48	6	Seems scared
.36	36	Has physical complaints
.35	53	Too clinging to older people
.35	7	Seems depressed

FACTOR V

Learning Problems

Loading	Symptom Number	Symptom
.56	11	Trouble learning
.52	10	Trouble reading
.47	13	Poor concentration
.34	14	Nothing soaks in
.31	35	Too babyish for age

Appendix D

Orthogonal Input Factor Matrix

	1	2	3	4	5
1	0.4333	0.3651	0.1778	-0.2301	-0.0780
2	0.5007	0.2256	-0.0708	-0.1197	-0.1634
3	0.1086	0.3186	-0.0973	-0.1465	0.1035
4	0.1639	0.5176	-0.2427	-0.2932	0.0338
5	0.4384	0.2175	0.2449	-0.1504	-0.0816
6	0.1740	0.4415	0.2204	0.1995	0.0276
7	0.2516	0.1505	0.1905	0.1703	-0.0253
8	0.1008	0.3604	-0.1376	0.0736	0.1721
9	0.3079	0.0342	-0.0372	0.0014	-0.0459
10	0.2576	0.1179	-0.3791	0.2427	0.1195
11	0.3023	0.0009	-0.3516	0.3433	0.1053
12	0.4295	0.3042	0.0473	-0.3772	-0.0943
13	0.4136	0.0364	-0.3156	0.2292	0.0394
14	0.4440	0.1845	-0.2630	0.0631	-0.0057
15	0.4219	0.3687	-0.3362	-0.1146	-0.0137
16	0.0599	0.0314	0.0164	-0.0326	0.0824
17	0.1828	0.0767	0.0891	0.1550	0.0417
18	0.4224	0.1024	0.0061	0.1414	0.0219
19	0.4683	-0.2093	-0.1609	0.0873	-0.1819
20	0.4751	-0.2902	-0.1043	-0.0642	-0.0586
21	0.1012	-0.0412	0.0555	0.1249	-0.0615
22	0.4522	-0.2443	0.0845	-0.1845	0.0544
23	0.4721	-0.0639	-0.0045	-0.1267	0.0587

Appendix D, Continued

	1	2	3	4	5
24	0.0943	0.0073	0.1848	0.0667	-0.0727
25	0.2137	-0.1299	0.0409	-0.0623	0.0441
26	0.2325	0.1038	0.1552	-0.1646	0.1389
27	0.3867	0.0267	0.2097	-0.1566	0.0996
28	0.2395	0.1128	0.1278	0.2020	- 0.0935
29	0.2039	-0.0491	-0.0401	-0.0633	0.0551
30	0.0127	0.0247	0.0282	-0.0513	0.0364
31	0.2182	-0.0290	0.0284	-0.0612	-0.2321
32	0.5175	-0.1878	0.0347	0.0238	- 0.1707
33	0.2502	-0.0631	0.1200	0.1358	- 0.0064
34	0.1323	0.2407	0.3484	0.3208	0.0161
35	0.2517	0.0868	-0.0594	0.3318	0.0617
36	0.1459	0.0888	0.2490	-0.1829	-0.0876
37	0.2867	- 0.0582	0.0086	0.0977	0.1903
38	0.4438	- 0.1563	-0.0247	-0.0041	-0.0177
39	0.5094	- 0.1349	0.0635	-0.0373	-0.2014
40	0.0217	0.1244	0.1306	0.2434	0.0850
41	0.2721	0.0120	0.0300	0.1737	0.0363
42	0.2562	- 0.1272	0.1280	-0.1014	0.1345
43	0.2009	- 0.1091	0.1773	-0.0953	0.2295
44	0.3120	- 0.0945	0.1584	-0.0467	0.0117
45	0.4300	- 0.1245	0.1435	-0.0930	0.234;
46	0.4077	- 0.1570	0.0985	0.0772	0.0206

	1	2	3	4	5
47	0.1407	0.1523	0.1523	0.1356	0.0206
48	0.4158	-0.0070	0.0070	0.0377	0.1587
49	0.2258	-0.0408	0.0408	-0.0202	0.2035
50	0.2324	-0.0493	0.0493	0.0062	0.0379
51	0.4487	-0.0774	-0.0774	0.0537	0.0190
52	0.4282	-0.1011	-0.1011	0.0751	0.1835
53	0.2349	0.1768	0.1768	0.2190	0.0137

Column Sums of Squared Loadings For Each Factor

1) 5.60 2) 1.86 3) 1.40 4) 1.31 5) 0.66

Total of All Sums of Squared For Each Factor

10.83

Appendix E

Oblique Oblimin Primary Factors

	1	2	3	4	5
1	0.0910	0.5321	0.1853	0.1905	0.0984
2	0.3080	0.4403	0.0539	0.0690	0.0110
3	-0.1376	0.3671	0.0590	-0.0298	0.0103
4	-0.0944	0.6608	0.0902	-0.1291	-0.1071
5	0.1372	0.3608	0.1994	0.2319	0.1584
6	-0.1458	0.2614	0.0040	0.4836	-0.0975
7	0.0478	0.0795	0.0014	0.3488	0.0271
8	-0.1805	0.2332	0.2316	0.0802	-0.0161
9	0.1804	0.1355	0.0811	0.0505	0.0763
10	0.0676	0.0908	0.5236	-0.0035	-0.0306
11	0.1402	-0.0558	0.5587	0.0466	0.0062
12	0.1536	0.5324	0.1183	0.0497	0.0873
13	0.2252	0.0827	0.4721	0.0336	0.0353
14	0.2080	0.2986	0.3377	0.0238	0.0157
15	0.1489	0.5493	0.2961	-0.0758	-0.0577
16	-0.0603	0.0432	0.0057	0.0026	0.0970
17	0.0061	0.0127	0.0704	0.2229	0.0589
18	0.2186	-0.0341	0.1625	0.1335	0.2134
19	0.4934	-0.0121	0.2092	-0.0245	0.0824
20	0.3999	-0.0276	0.1122	-0.1351	0.2911
21	0.1076	-0.0673	0.0286	0.1304	-0.0104
22	0.2651	0.0424	0.0583	-0.2026	0.3989
23	0.1892	0.1492	0.0419	-0.0362	0.3347
24	0.0653	-0.0201	0.1073	0.1947	0.0132

Appendix E, Continued

	1	2	3	4	5
25	0.0968	0.0223	-0.0169	-0.0334	0.2262
26	-0.0912	0.1896	-0.1224	0.0571	0.2754
27	0.0310 =	0.1673	-0.1435	0.0999	0.3523
28	0.1308	0.0518	0.0418	0.3197	-0.0470
29	0.0718	0.0529	0.0504	-0.0583	0.1703
30	-0.0396	0.0148	0.0209	0.0616	0.0162
31	-0.0953	0.0362	0.1209	0.0626	0.2932
32	0.4506	0.0426	0.0084	0.0442	0.1999
33	0.1182	0.0799	-0.1217	0.0087	0.2237
34	-0.1114	0.0096	-0.0478	0.5687	-0.0414
35	0.0569	0.0291	0.3059	0.2602	-0.0006
36	0.0623	0.0084	-0.0808	0.3593	-0.0316
37	0.3231	0.0212	0.0505	0.1218	-0.0290
38	0.2539	0.0118	0.1053	-0.0029	0.2830
39	0.4472	0.0903	-0.0310	0.0779	0.1605
40	-0.1309	0.0596	0.0694	0.2955	-0.0177
41	0.0900	0.0111	0.1407	0.1879	0.1009
42	0.0154	0.0181	-0.0725	-0.0042	0.3582
43	0.1112	0.0493	-0.0911	0.0191	0.4159
44	0.1322	0.0132	-0.0871	0.0896	0.2586
45	0.0721	0.0256	-0.0378	0.0415	0.4578
46	0.0173	0.0217	0.0217	-0.0025	0.5067

Appendix E, Continued

	1	2	3	4	5
47	0.0354	-0.0110	-0.0171	0.2400	0.0254
48	0.1238	-0.0774	0.1366	0.0124	0.3978
49	-0.0247	-0.0943	0.0529	-0.0322	0.3633
50	0.1780	-0.0402	- 0.0042	0.0309	0.1473
51	0.3120	-0.0231	0.1683	-0.0038	0.2322
52	0.4504	-0.0020	0.1486	0.0121	0.0700
53	0.0481	0.0186	0.0348	0.3539	0.0257

Column Sums of Squared Loadings

For Each Factor

1) 2.05 2) 2.17 3) 1.59 4) 1.66 5) 2.29

BIBLIOGRAPHY

Achenbach, Thomas M. The Classification of Children's Psychiatric Symptoms: A Factor-Analytic Study. Psychological Monographs: General and Applied, Vol. 80, No. 6, 1965.

Ackerson, Luton, Children's Behavior Problems, Vol. II. Chicago: Behavior Research Fund Monograph, University of Chicago Press, 1942.

Cattell, R. B. Factor Analysis. New York: Harper and Row, 1952.

Cattell, R. B. Handbook of Modern Personality Theory. Chicago: Adline, 1970.

Cattell, R. B. The Scientific Analysis of Personality. Harmondsworth, England: Penguin Books, 1965.

Chess, S., Thomas, A., Birch, H. G., and Hertzig, M., Implications of a longitudinal study of child development for child psychiatry. American Journal of Psychiatry, 117:434-441, 1960.

Dreger, Rlaph M., The establishment of diagnostic categories for the evaluation of specific therapies for children's emotional disorders. The Alabama Journal of Medical Sciences, 7:55-60, 1970.

Dreger, Ralph M., Lewis, P. M., Rich, T. A., Miller, K. I., Reid, M. P., Overlade, D. C., Taffel, C., and Fleming, E. L.,

Edwards, A. M., Census of Population: A Report of Socio-economic Categories. Washington, D. C.: United States Department of Health, Education and Welfare, 1940.

Guertin, Wilson H., A factor-analytic study of schizophrenic symptoms. Journal of Consulting Psychology, 16:308-312, 1952.

Guertin, Wilson H., and Bailey, John P., Jr. Introduction to Modern Factor Analysis. Ann Arbor, Michigan: Edwards Brothers, Inc., 1970.

Holzinger, K. J., and Harmon, H. H. Factor Analysis. Chicago: University of Chicago Press, 1941.

Jenkins, R. L., and Glickman, Sylvia, Common syndromes in child psychiatry. American Journal of Orthopsychiatry, 16:244-254, 1946a.

Jenkins, R. L., and Glickman, Sylvia, The schizoid child. American Journal of Orthopsychiatry, 16:255-258, 1946b.

Jenkins, R. L., and Hewitt, L., Types of personality structure encountered in child guidance clinics. American Journal of Orthopsychiatry, 14:84-94, 1944.

McCord, J., and McCord, W., Cultural stereotypes and the validity of interviews for research in child psychiatry. Child Development, 32:171-186, 1961.

Patterson, G. R. A Tentative Approach to the Classification of Children's Behavior Problems. Doctoral Dissertation, University of Minnesota, 1956.

Rubin, Eli Z., Simson, Clyde B., and Betwee, Marcus C. Emotionally Handicapped Children and the Elementary School. Detroit: Wayne State University Press, 1966.

Thurstone, L. L., Multiple factor analysis. Psychological Review, 38:406-427, 1931.

Weiss, David J., Further consideration in applications of factor analysis. Journal of Counseling Psychology, 18:85-92, 1971.

Wenar, Charles, and Coulter, Jane B., A reliability study of developmental histories. Child Development, 33:453-462, 1962.

Wittenborn, J. R., A factor analysis of Rorschach scoring categories. Journal of Consulting Psychology, 14:261-267, 1950b.

Wittenborn, J. R., A new procedure for evaluating mental hospital patients. Journal of Consulting Psychology, 14:500-501, 1950a.

Wittenborn, J. R., Symptom patterns in a group of mental hospital patients. Journal of Consulting Psychology, 15:290-302, 1951.

Wittenborn, J. R., Herz, Marvin I., Kurtz, Kenneth H., Mandell, Wallace, and Tatz, Sherman, The effect of rater differences on symptom rating scale clusters. Journal of Consulting Psychology, 16:107-109, 1952.

Wittenborn, J. R., and Holzberg, J. D., The generality of psychiatric syndromes. Journal of Consulting Psychology, 15:372-380, 1951a.

Wittenborn, J. R. and Holzberg, J. D., The Rorschach and descriptive diagnosis. Journal of Consulting Psychology, 15:460-463, 1951b.

Wittenborn, J. R., and Holzberg, J. D., The Wechsler-Bellevue and descriptive diagnosis. Journal of Consulting Psychology, 15:325-329, 1951c.

Wittenborn, J. R., Mandler, G., and Waterhouse, I. K., Symptom patterns in youthful mental hospital patients. Journal of Clinical Psychology, 7:323-327, 1951.

Wittenborn, J. R., and Mettler, Fred A., Some psychological changes following psychosurgery. Journal of Abnormal and Social Psychology, 46:548-556, 1951.

Zuk, B., Autistic distortions in parents of retarded children. Journal of Consulting Psychology, 23:171-176, 1959.

BIOGRAPHICAL SKETCH

Marnell LaRoe Hayes was born July 24, 1939, at Eustis, Florida. In June, 1961, she received the degree of Bachelor of Arts from the University of Florida with a major in English. In September, 1964, she entered the Graduate School of the University of Florida and received the degree of Master of Education in June, 1965.

Mrs. Hayes has served as a teacher in Florida public schools, state institutions, and University clinical settings. She has worked as Regional Representative of the Mental Retardation Division of the Florida Department of Health and Rehabilitative Services, and has taught at the University of Florida, Utah State University, and the University of Southern Mississippi.

She has published papers in special education in _Exceptional Children_, _Elementary English_, _Digest of the Mentally Retarded_, _School Applications of Learning Theory_, and other journals, and has presented papers at national and international conferences. She is a member of the Council for Exceptional Children, American Orthopsychiatric Association, and other professional organizations.

I certify that I have read this study and that in my opinion it conforms to acceptable standards of scholarly presentation and is fully adequate, in scope and quality, as a dissertation for the degree of Doctor of Education.

Myron A. Cunningham

Myron A. Cunningham, Chairman
Professor of Education

I certify that I have read this study and that in my opinion it conforms to acceptable standards of scholarly presentation and is fully adequate, in scope and quality, as a dissertation for the degree of Doctor of Education.

Paul L. Adams

Paul L. Adams
Professor of Psychiatry and
Pediatrics

I certify that I have read this study and that in my opinion it conforms to acceptable standards of scholarly presentation and is fully adequate, in scope and quality, as a dissertation for the degree of Doctor of Education.

Audrey S. Schumacher

Audrey S. Schumacher,
Professor of Psychology

I certify that I have read this study and that in my opinion it conforms to acceptable standards of scholarly presentation and is fully adequate, in scope and quality, as a dissertation for the degree of Doctor of Education.

Cary L. Reichard
Assistant Professor of Education

This dissertation was submitted to the Dean of the College of Education and to the Graduate Council, and was accepted as partial fulfillment of the requirements for the degree of Doctor of Education.

June, 1971

B. L. Sharp by M C Butler
Bert L. Sharp, Dean
College of Education

H. P. Hanson, Dean
Graduate School